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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/599,842	10/11/2006	Rifat Ata Mustafa Hikmet	NL 040392	5424

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P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER	
SANTIAGO, MARICELI	

ART UNIT	PAPER NUMBER
2879	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/599,842	HIKMET, RIFAT ATA MUSTAFA	
	Examiner	Art Unit	
	Mariceli Santiago	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 July 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 October 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Receipt of the Amendment, filed on July 25, 2008, is acknowledged.

Claims 1-12 are pending in the instant application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5-7, 9 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Funada et al. (US 4,416,515).

Regarding claim 1, Funada discloses a color conversion cell (Fig. 4) for adjusting a color or color temperature of light from a light source (10) having a first emission spectrum, the color conversion cell comprising a color converting substance (6) held between two electrodes (2), the color converting substance having a second emission spectrum (500-600 nm, Column 4, lines 31-34) different from the first emission spectrum (400-500 nm, Column 4, lines 31-34), the color conversion cell being shiftable between at least a first state (no voltage applied) wherein the color converting substance will absorb a first ratio, A1, of light incident on the cell, emit light with the second emission spectrum, and transmit a second ratio, T1, of light incident on the cell, and a second state (voltage applied) wherein the first ratio, A2, is smaller that in the first state and wherein the second ratio, T2, is larger in the first state.

Regarding claim 5, Funada discloses a color conversion cell further comprising an electrowetting cell with the color converting substance mixed with a liquid (Column 2, lines 55-60).

Regarding claim 6, Funada discloses a color conversion cell wherein the color conversion cell is adapted to provide a longer average pathlength of the source light in the matrix containing the color converting substance inside the cell in its first state, than in its second state.

Regarding claim 7, Funada discloses a color conversion cell further comprising electrically controllable scattering media (Column 2, lines 55-60).

Regarding claim 9, Funada discloses a light emitting device (Fig. 3) with adjustable color or color temperature comprising a light source (10) having a first emission spectrum, and a color conversion cell positioned to be illuminated by at least part of the light from the light source (Fig. 3), the color conversion cell comprising a color converting substance (6) in a matrix (5) held between two electrodes (2), the color converting substance (6) having a second emission spectrum different from the first emission spectrum (Column 4, lines 31-34), the color conversion cell being shiftable between at least a first state wherein the color converting substance will absorb a first ratio, A1, of light incident on the cell, emit light with the second emission spectrum, and transmit a second ratio, T1, of light incident on the cell, and a second state (voltage applied) wherein the first ratio, A2, is smaller that in the first state and wherein the second ratio, T2, is larger in the first state.

Regarding claim 12, Funada discloses a method for adjusting the color or color temperature of light from a light source (10) having a first spectrum, the method comprising providing a color conversion cell comprising a color converting substance (6) in a matrix (5) held between two electrodes (2), illuminating the matrix with the light source (10), absorbing at least

part of the source light illuminating the matrix in/by the color converting substance (6), emitting light with a second emission spectrum from the color converting substance (Column 4, lines 31-34), adjusting a voltage between the two electrodes to increase or decrease the amount of source light absorbed by the color converting substance and the amount of light with a second emission spectrum emitted by the color converting substance.

Claims 1-6, 9, 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Iwanaga et al. (JP 09-258272).

Regarding claim 1, Iwanaga discloses a color conversion cell (Fig. 1) for adjusting a color or color temperature of light from a light source (UV incident light) having a first emission spectrum, the color conversion cell comprising a color converting substance (9, 10) held between two electrodes (2), the color converting substance having a second emission spectrum (magenta, cyan, yellow) different from the first emission spectrum (UV), the color conversion cell being shiftable between at least a first state (no voltage applied) wherein the color converting substance will absorb a first ratio, A1, of light incident on the cell, emit light with the second emission spectrum, and transmit a second ratio, T1, of light incident on the cell, and a second state (voltage applied) wherein the first ratio, A2, is smaller that in the first state and wherein the second ratio, T2, is larger in the first state.

Regarding claim 2, Iwanaga discloses a color conversion cell wherein the color converting substance comprises anisometric color converting particles (9, dichromatic molecules) having a high absorption orientation and a low absorption orientation in relation to light incident on the cell, the color conversion cell further comprising means for, when the cell is in the first state, orienting the anisometric color converting particles at least substantially in their high absorption orientation relative to the source light illuminating the cell, and for, when the cell

is in the second state, orienting the anisometric color converting particles at least substantially in their low absorption orientation relative to the source light illuminating the cell.

Regarding claim 3, Iwanaga discloses a color conversion cell wherein the means for orienting comprises a liquid crystal material and wherein the anisometric color converting substance (9, dichromatic molecule) is mixed with liquid crystals (8), to provide a controllable orientation of the anisometric particles.

Regarding claim 4, Iwanaga discloses a color conversion cell wherein the means for orienting comprises a suspended particle (8) device and wherein the anisometric color converting particles (9, dichromatic molecule) are suspended in the suspended particle (8) device to provide a controllable orientation of the anisometric particles.

Regarding claim 5, Iwanaga discloses a color conversion cell further comprising an electrowetting cell with the color converting substance (9, 10) mixed with a liquid (8).

Regarding claim 6, Iwanaga discloses a color conversion cell wherein the color conversion cell is adapted to provide a longer average pathlength of the source light in the matrix containing the color converting substance inside the cell in its first state, than in its second state.

Regarding claim 9, Iwanaga discloses a light emitting device (Fig. 1) with adjustable color or color temperature comprising a light source (UV incident light) having a first emission spectrum, and a color conversion cell positioned to be illuminated by at least part of the light from the light source, the color conversion cell comprising a color converting substance (9, 10) in a matrix (8) held between two electrodes (2), the color converting substance (9, 10) having a second emission spectrum different from the first emission spectrum (magenta, cyan, yellow), the color conversion cell being shiftable between at least a first state wherein the color converting substance will absorb a first ratio, A1, of light incident on the cell, emit light with the

second emission spectrum, and transmit a second ratio, T1, of light incident on the cell, and a second state (voltage applied) wherein the first ratio, A2, is smaller that in the first state and wherein the second ratio, T2, is larger in the first state.

Regarding claim 11, Iwanaga discloses a color conversion cell comprising multiple color conversion cells comprising different color converting substances and being arranged behind one another as seen from the light source to allow light from the light source to illuminate a succeeding cell through a preceding cell (Fig. 1).

Regarding claim 12, Iwanaga discloses a method for adjusting the color or color temperature of light from a light source (UV incident light) having a first spectrum, the method comprising providing a color conversion cell comprising a color converting substance (9, 10) in a matrix (8) held between two electrodes (2), illuminating the matrix with the light source (UV incident light), absorbing at least part of the source light illuminating the matrix in/by the color converting substance (9, 10), emitting light with a second emission spectrum from the color converting substance (magenta, cyan, yellow), adjusting a voltage between the two electrodes to increase or decrease the amount of source light absorbed by the color converting substance and the amount of light with a second emission spectrum emitted by the color converting substance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwanaga et al. (JP 09-258272) in view of Valliath et al. (US 5,745,203).

Regarding claim 8, Funada fails to exemplify the limitation of a switchable reflector positioned behind the color converting substance such that the color converting substance is between the reflector and the light source, in the first state of the color conversion cell, the reflector at least substantially reflects source light incident on the cell, and in the second state of the color conversion cell, the reflector, at least substantially transmits source light incident on the cell.

Valliath discloses a light conversion cell further provided with a switchable reflector (21) such that the light converting cell (20) is between the reflector (21) and the light source (UV incident light), in the first state of the color conversion cell, the reflector at least substantially reflects source light incident on the cell, and in the second state of the color conversion cell, the reflector, at least substantially transmits source light incident on the cell (Column 3, lines 30-36) in order to redirect light within a predetermined spectral band, and provide distinct interference patterns to allow the display device to operate in tow different modes in response to ambient lighting conditions. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the switchable reflector disclosed by Valliath in the color conversion source of Iwanaga in order to redirect light within a predetermined spectral band, and provide distinct interference patterns to allow the display device to operate in tow different modes in response to ambient lighting conditions.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Funada et al. (US 4,416,515) in view of Tei (JP 10-206850 A).

Regarding claim 10, Funada fails to exemplify the limitation of further comprising a reflector positioned between the light source and the color conversion cell, the reflector being at least substantially transparent for source light with the first spectrum and at least substantially reflective for light with the second spectrum emitted by the color converting substance.

Tei discloses a light emitting device provided with a light source and a liquid crystal cell, and further comprising a reflector (7) positioned between the light source (5) and the crystal cell, the liquid crystal cell provided with a color converting substance (3), the reflector being at least substantially transparent for source light with the first spectrum and at least substantially reflective for light with the second spectrum emitted by the color converting substance, in order to improve luminance characteristic of the displayed image by redirecting light emitted by the color converting substance back to the front of the display.

Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the reflector component disclosed by Tei in the light emitting device of Funada in order to improve luminance characteristic of the displayed image by redirecting light emitted by the color converting substance back to the front of the display.

Response to Arguments

Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariceli Santiago whose telephone number is (571) 272-2464. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Mariceli Santiago/
Primary Examiner, Art Unit 2879